W5YI

America's Oldest Ham Radio Newsletter

REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable.

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In This Issue...

Vol. 22, Issue #9 **$1.50** PUBLISHED TWICE A MONTH **May 1, 2000**

Radioamateurs Upgrading to General, Extra in BIG numbers!

The emphasis has changed in ham radio. The frenzy to get a CSCE *(Certificate of Successful Completion of Examination)* for the Element 3 (General) and Element 4 (Extra Class) examinations before April 15th - or to obtain "evidence" of being licensed before March 21, 1987 as an "Old Tech" has now been replaced by a rush to turn them in to VE teams to get upgraded!

On December 30th, the FCC issued new rules that reduced the number of license classes from 6 to 3, the number of license examinations from 8 to 4 and the 5 words-per-minute became the top code speed in ham radio.

The four remaining examinations are Element 1 (5 wpm code), Element 2 (35 question multiple choice Technician written exam), Element 3 (35 question General Class written exam) and Element 4 (a 50 question Extra Class exam.)

Not everyone liked the FCC's version of ham radio for the 21st century ...particularly those who have already passed a high speed Morse code test. But apparently thousands of existing ham radio operators welcome a top Morse speed of 5 wpm - especially the Tech Plus and Advanced Class operator!

One of the features of the new Amateur Radio Service restructuring *Report and Order* that no one gave much thought about, was an FCC provision that permitted radioamateurs to take the existing examinations and receive credit toward the new ones. It had the biggest impact on Tech Plus and Advanced Class operators.

Since no additional code proficiency was needed, Tech Plus operators could take the existing Element 3B (General Class) exam and receive a CSCE to use as credit toward the new Element 3. And Advanced Class operators could pass the existing Element 4B (Extra Class) exam and trade it in after April 15th towards the new Element 4.

The impact was immediate as regular stocks of General and especially Extra Class study manuals quickly sold out everywhere. Dealers and publishers couldn't fill the orders fast enough. January, February and March were very big testing months for VE teams especially for Element 3B and 4B. A side benefit of this policy was that it quickly cleared the old study manuals from the marketplace.

Two factors indicate that there will be thousands of new General and Extra Class radioamateurs shortly. Judging by the number of study manuals that were sold ...and amateurs passing Element 3B and 4B without upgrading, there is going to be an enormous number of upgrades.

Our guess is "more than 15 thousand" and it could be double that figure! To give you an idea just how many that is, last year (for the entire year) there were about 2,500 General Class upgrades and 2,000 amateurs upgraded to the Extra Class.

The indications are that more than a year's worth of General and Extra Class amateurs could

THE W5YI REPORT [Pub. No. 009-311] is published twice monthly by The W5YI Group, Inc., 2000 E. Randol Mill Road # 608-A, Arlington, TX 76011
SUBSCRIPTION RATE: (U.S., Canada and Mexico) One Year (24 issues) $24.50 • Two Years: $45.00 • Three Years: $64.00. • Tel. 817/461-6443
Foreign Subscriptions via Air Mail: $39.50 per year. (Payment may be made by Check, Money Order, VISA or MasterCard payable in U.S. funds.)
Periodicals Postage paid at Arlington, TX. **POSTMASTER:** Send address changes to THE W5YI REPORT, P.O. Box 565101, Dallas, TX 75356

upgrade their license on April 15th alone! It seems that many – and perhaps most – VE teams are running a special "paper shuffling" session on Saturday April 15th just to process those upgrades. Some are holding it at midnight on the 14th!

It also will create an electronic filing problem for the Volunteer-Examiner Coordinators. The steady flow of applications from their various VE teams will be interrupted by a huge influx of General and Extra Class applications arriving between April 15th and May 1st. Fortunately, those upgrading can use their new privileges immediately on the strength of their CSCE which immediately grants their new operating privileges for up to a year. *(See Sec. §97.9(c))*. It could be a few extra weeks, however, before their "hard copy" operator license arrives.

Last year, approximately 25,000 people got a new or upgraded license. The potential is for that many (or more) amateurs to upgrade to the General or Extra Class alone by this summer! There are currently 104 thousand Advanced Class and 134 thousand Tech Plus Class amateurs – many of whom (now that the code speed has been lowered) want to upgrade to new HF privileges. And in March 1987, there were another 85 thousand "Old Technician's" who took the previous 50 question Element 3.

PROVING THAT YOU WERE AN "OLD TECH"

They too become immediately eligible to upgrade without further examination to the General Class by just proving that they were licensed as a Technician operator before March 21, 1987. That is, providing they are still licensed (or within the 2 year grace period for renewal.)

A previous Technician who was licensed before March 21, 1987 but now with an expired (more than 2 years) gets exam credit for Elements 1 and 3, but still has to pass the Element 2 (Technician) written exam. This is because of the way the new Rules are written. An amateur may only receive Element 2 credit if they are now in the FCC's Amateur Service database.

We have been fielding hundreds of inquiries as to what constitutes adequate evidence that an amateur is indeed an "Old Tech." The answer to that question is:

1.	**An FCC Technician Class license copy** issued before March 21, 1987 ...although that date could be as late as July 15 depending on how fast the FCC processed your license back then
2.	**An original Element 3 CSCE document** issued before March 21, 1987.
3.	**An FCC-issued Verification Letter** (available from FCC, ATTN: Amateur Section, 1270 Fairfield Road, Gettysburg, PA 17325.) Obtaining this letter could take some time, however, since the FCC is backed up with requests and they don't have the people to assign to the job.
4.	**A certification letter from the FCC's contract information provider**, International Transcription Services. ITS charges $15, I believe. Tel. (717) 337-1433
5.	**A Radio Amateur Callbook listing** from the 1987 (or before) issue indicating that you are a Technician. The Callbook will provide a "Proof of Licensing" document for $10.00 Send request to: Radio Amateur Callbook, 575 Prospect Street, Lakewood, NJ 08701 – or Tel. 732-905-2961 (choose option 5.)
6.	**The W5YI Group will provide a photocopy** of the appropriate page from the 1987 Callbook for $5.00. (Send to: P.O. Box 565101, Dallas, TX 75356.) Tel. 817-274-0400
7.	Fred Lloyd AA7BQ has posted an **online version of his first (circa 1993) CD-ROM** at his website located at <http://www.qrz.com/search1993.html>. This database merely requires that you enter your call sign or name to obtain 1983 to 1987 licensing data .

OBTAINING CODE CREDIT FOR 5 WORDS-PER-MINUTE

1.	**Any expired or current Novice license** is valid for 5 wpm.
2.	A **Technician license granted before Feb. 14, 1991** has credit for 5 wpm.
3.	A **Technician Plus license** is valid for 5 wpm code credit.
4.	Any **Technician Class license issued after February 14, 1991 together with a CSCE** issued between Feb. 14, 1991 and July 1994 showing 5 wpm code credit. The FCC did not begin issuing Tech Plus licenses until 1994 and some pre-1994 Tech licenses did not get updated to Tech Plus to reflect the 5 wpm credit.
5.	Any current (or expired less than 5 years) **Commercial Radiotelegraph license** gets credit for Element 1.

■ The April 14th Dallas Morning News carried a feature story (which started on Page 1) entitled **"Wave of the Past? – Morse code's relevance in the digital age is at the center of amateur radio operators' debate."**

The article traced Morse code use from the 1912 sinking of the Titanic to "FCC regulations, set to take effect on Saturday, [April 15th which] lower the required standards for Morse code proficiency to receive an amateur radio operator's license."

New ARRL president Jim Haynie, W5JBP is quoted as saying "I don't look at it as lowering the requirements, I look at it as part of going into the 21st century." Your author (Fred W5YI) was also interviewed and made the comment "We should not be clinging to antiquated communication means in the world of digital technology. ....there is no reason to be using ...the human brain when you can use a computer that is so much faster and more efficient. ...The future of ham radio is certainly not tapping out manual Morse code communications. It is satellite communications, automatic error-correcting digital modes and new technologies that are constantly developing."

The article is online at the Dallas Morning News website at <http://dallasnews.com/national/64175_MORSE14.html>

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AMATEUR RESTRUCTURING AS SEEN BY KH7M

The changes to amateur radio via "restructuring" have gone on now for 88 years! In fact, ever since 1912, when Hiram Percy Maxim was forced to give up his call, "SNY", move below 200 meters, and knuckle under to government regulation including a 5 wpm Morse test.

Then in 1919 they raised the Morse test to 10 wpm. Throughout the 20's CW gradually replaced King Spark, and spark was eventually outlawed.

In 1923 they introduced something called "Amateur Extra First Grade" with special calls and privileges. The class was discontinued when only 6 people applied in 1926.

Then in 1927 they reduced the license classes from two to only one class. Old "Second Grade" had to upgrade within one year, or go QRT.

In 1927 at the international radio conference, the amateur bands were reduced to less than half what we had previously. For example, 40 meters was cut from 7.0 to 7.5 to its present size. 20 was originally 14.0 to 15.0. There were numerous articles in QST and other publications about getting ready for the band reductions, which went into effect in 1929. "1929" transmitters had to be stable and signals had to be narrow and clean.

In 1932 they changed it all again, dividing us up into Class A, B, and C, all with a 10 wpm code test.

In 1936 they said there were too many new hams coming into the hobby, so the Morse test speed was raised to 13 wpm.

In the early 50's they renamed everybody from A, B, or C to Advanced, General, or Conditional. They also introduced 3 new license classes called Novice, and Technician at 5 wpm, and Extra at 20 wpm.

Also in the mid-50's, the 11 meter band was taken from amateurs and converted to a citizens band, no test. In the late 60's they invented something called Incentive Licensing.

In 1976 they quit requiring us to certify we had been on the air for 12 hours last year (for renewal). They also ended the Conditional license.

In 1991 they removed the Morse requirement for VHF/UHF-only licensees.

In 2000 they changed Morse testing back to the 1912 requirement of 5 wpm, and the number of classes to three.

However, an organization has moved into place to rectify all of this! Better have a look at <http//w3.gwis.-com/~joelr/gearpix.htm> [This is a really funny ham parody site run by **Joe Ventolo, K8DMZ** of Enon, Ohio of GEARvakf fame. Check it out for a chuckle!]

[Above story was sent to us by: Jim Reid, KH7M, Koloa, Hawaii on the island of Kauai]

MORSE CODE - GLOBAL TREND CONTINUES

Australia's WIA-Victoria website says that in addition to Australia, the following is a list of Morse code examination "winds of change" occurring around the world:

- The South African Telecommunications Regulatory Authority has agreed to 5wpm. Implementation within two months.
- Radio Amateurs Canada has asked Industry Canada to adopt 5wpm.
- The US Federal Communications Commission adopted 5wpm from April 15.
- Britain, Sweden and Gibraltar are already using the 5wpm standard.
- Germany, Switzerland, The Netherlands, India, Israel, and Papua New Guinea are actively considering 5wpm.
- Radio societies in Scandinavia are closely monitoring developments and are yet to make their views or intentions known.
- Nothing has been heard from major countries in the Asia/Pacific, Oceania (except VK), Central and South America, and the African continent (except ZS).
- Ireland is opposed to 5 wpm, believing it is "impractical", and will stick with 12 wpm.
- The New Zealand Amateur Radio Transmitters (NZART) has been advised by the NZ Ministry of Economic Development that it is considering changes to the Radio Regulations that include a full privilege HF license requiring 5 wpm. The present 12wpm Morse test would be retained and to be voluntary for reciprocal licensing purposes if required. *[Thanks go to Jim Linton VK3PC, President, WIA Victoria, Australia for the above.]*

■ **As we go to press, ham astronaut James D. Halsell, KC5RNI (Col. USAF) is set to launch in the Atlantis Space Shuttle on a rendezvous with the International Space Station (ISS) now being built in space.** STS-101 is to fit off on Monday, April 24, 2000 at 4:15 p.m. (Eastern Time) from Kennedy Space Center Launch Pad 39A.

On STS-101, Atlantis will fly as the most updated Space Shuttle ever, with more than 100 new modifications including a new "glass cockpit". Seven astronauts will link up to the international outpost two days after launch and will spend six days docked to the ISS, four of which will be spent refurbishing and replacing components in both the Zarya and Unity ISS modules.

The crew plans to transfer almost one ton of equipment from Atlantis' cargo bay into Zarya and Unity for use by the Expedition One crew later this year. Permanent occupancy of the ISS is scheduled to begin in the fall.

If there is sufficient shuttle propellant following Atlantis' undocking from the ISS, a flyaround inspection will be performed prior to the Shuttle's final separation maneuver.

Landing will be on May 4th. The next mission to expand the capacity of the International Space Station, will be the launch of the Zvezda Service Module in mid-July.

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CUTTING EDGE TECHNOLOGY

■ **Ramtron's ferroelectric RAM chips -- or FRAM for short** -- promise many benefits over electrically-eraseable, programmable read-only memories (EEPROMs). EEPROMs are often used to hold data even when the computer's power is turned off. FRAMs accomplish the same task, only with much greater speed and a longer life span. FRAMs do not require dynamic refreshing, as DRAMs do. The FRAM technology depends upon the ferroelectric effect, which stores data within a crystalline structure. FRAM read/write times are as fast as 100 nanoseconds, and can withstand millions of rewrites. Since they hold all of their data if the power is lost, such chips can keep user-selectable system parameters and handle RF identification data. Direct, drop-in replacements for EEPROMs come in sizes up to 1 Mb.

■ **Watch out for low-humidity days!** Industry reports say that nearly one-third of all electronic failures are due to electrostatic discharge.

■ **You have heard of "WD-40." But do you know what the name came from?** WD-40 stands for Water Displacement, 40th attempt. The chemist, Norm Larsen who developed WD-40 back in 1953 was attempting to develop a formula to prevent corrosion – a task which is done by displacing water. He perfected the formula on his 40th try.

■ **GM is recalling almost a thousand EV1 electric cars and Chevrolet S-10 electric pickup trucks** because of a design flaw in the charging port. Too much heat in this area can build up when the vehicle is recharging, possibly starting a fire.

■ **One problem with SCRs and TRIACs in AC power switching applications is the RFI they generate.** But if AC power is turned on or off when it crosses the zero axis, no RFI results. Thyristors (SCRs) and TRIACs are designed to turn off when current through them reaches zero, but in order to turn on at such a time, special logic circuitry is required. Certain solid-state relays include this feature, waiting until a zero crossing occurs before turning on the SCR. This can cause a delay of up to 1/120th of a second, but it eliminates RFI in nearby circuits.

■ **Chances are you don't have three hands, so how can you take meter readings in a dark area?** Try Extech Instrument's digital multimeter that contains its own built-in flashlight. The 380202 can shine a light from the top of the unit, powered from its own separate battery, so it won't drain that of the meter's. The numeric display is backlit, too.

■ **Need a particular waveform? An arbitrary waveform generator (AWG) may do the trick.** It can create unique waveshapes that ordinary function generators can't. The more advanced AWGs can capture a waveform's image from a digital oscilloscope; edit the waveform's shape with the help of a mouse; or even create a wavefrom from a mathematical equation. Software libraries can create standard waveforms for an NTSC video signal, white noise, AM and FM, or even disk drive read/write signals.

■ **One sneaky way to prevent other companies from reverse-engineering and copying valuable microprocessor circuitry is to create your own chip.** The "cores" inside some microprocessors can be reconfigured by users to create special, one-of-a-kind instructions that other chips can't handle. You can create your own specific instruction set, modify pre-existing commands, and even compile programs with these "new" commands with a custom compiler.

■ **Industry reports say the overwhelming majority of electronic devices made today -- 95% -- use digital circuitry, rather than analog.** Few high-tech devices are strictly analog now, though of course many devices are hybrids -- a combination of both digital and analog circuitry.

■ **DVD has become the fastest-selling consumer electronics item in history.** Since its debut in early 1997, over five million DVD players have been sold in the U.S., and twice that number of DVD-based equipment is installed in personal computers. All this in less than three years!

■ **How much torque is enough?** Mountz's TAAMS (Torque-Activated AM Signal) wrench transmits an AM signal to a special receiver when a preset torque limit is reached. Workers on an assembly line using the wrenches receive feedback to let them know that they've torqued the fastener hard enough, and the RF-based network records each completed fastener.

■ **Today's microprocessors, microcontrollers and other very large-scale integrated circuits (VLSIs) are so complicated** that it is impossible for any one individual to design, produce, manufacture or understand them. Different sections of a chip are parceled out to different engineers or teams, which do not need to work in the same building. They may be countries or continents apart, sharing their data electronically.

■ **Hearing aids are getting smarter.** The latest technique involves digital sampling within the device itself, as small as it is. Incoming audio is "sampled," or digitally examined thousands of times per second. If a sound is already too loud, the software tells the computer to not make that sound any louder. If a sound is too quiet for comfort, the computer increases the volume of that particular sound.

■ **If you're in a new building, it probably looks too bright inside.** There's a reason for that. Lighting engineers know that building lighting gets progressively dimmer with time, so they purposely make the lighting systems brighter than usual to compensate for the loss.

■ **Got a worn-out display in your Fluke 87 digital multimeter?** You can get an upgrade display kit from the manufacturer and install it yourself. The new white backlight model is three times brighter, provides larger digits and can be seen from an even wider viewing angle. The kit costs far less than a new meter.

EMERGING COMMUNICATIONS

■ **The first Internet-only, all-news radio station is "on the air."** WTOP2, Federal News Radio, broadcasts Real Audio from Washington, DC. The station, set up by WTOP-AM/FM, uses no radio transmitter but transmits news throughout the 'Net at www.wtop2.com. One reason for the station's existence is poor radio transmitter coverage among the hundreds of office buildings in the Washington/Virginia area; audio streaming through computers penetrates this wall of silence.

■ **Radio stations want to know specific listening habits of their target audience, and standard ratings systems are not perfect.** The iTag is a keychain-sized device, now undergoing testing in several cities across the U.S., to let listeners collect specific information about what

they hear on their favorite radio station. The iTag, made by Xenote, connects to the Internet. When you hear something you want more information about (such as a commercial, a song title or artist, etc.), you click a button on the iTag. When you get home, you connect the iTag to your computer, log onto the radio station's Web page, and the information you want is instantly downloaded. This eases the burden on the radio station staff, the listeners get what they want quickly, and management gets a better picture of what their listeners want.

■ **Better solar cells mean better satellites.** Solar cells, which convert light into electricity, have been around since the 1950's but have usually been rather inefficient. But they're often the most economical way to provide power for orbiting satellites. The EMCORE Corporation recently announced that their new process makes the most efficient solar cells in the world, approaching 25% efficiency. With a satellite wallpapered with those devices, it can provide more transmitter power for its radios and transponders for Earthbound users. As an added bonus, EMCORE says its new cells last much longer in the savage environment of space than ordinary solar cells do.

■ **Forty years of weather satellites! It seems difficult to imagine now that most Americans didn't know when a hurricane was bearing down on them.** April 1, 2000 was the 40th anniversary of TIROS -- the world's first weather satellite. Previous to the Television Infrared Observation Satellite, most people who hadn't lived through one of Earth's most powerful weather events had no respect for hurricanes and held no appreciation -- or fear -- of them. All that has changed because dozens of meteorological satellites now whiz about the planet, showing us hurricanes and typhoons as they are born.

■ **Can't get a window seat on the plane?** No matter. Entertainment centers on the newest commercial jets that include color viewscreens on seats offer movies, sitcoms and news, but one of the latest bonuses is a stunning view of the ground streaming by below. This comes from a small video camera mounted outside the plane. Passengers literally get to see what they're flying over, without obstructed views from wings, engines, or each other.

■ **"How Far We've Come" Dept.** -- The November, 1958 issue of *Electronics Illustrated* announced a demonstration of stereo sound during a TV program. Remember, this was just barely after the start of the space age. During October of that year, the *George Gobel Show* would transmit one channel of sound over its regular TV audio, while viewers in certain cities would tune in an AM radio station for the other channel and physically place the radio receiver about eight feet to the right of the TV set. Today, practically every TV program is available in full stereo, with most TV sets offering it directly.

COMPUTER INFO

■ In a direct challenge to Palm handheld PDA's (pocket digital assistants), **Microsoft and three hardware firms (Compaq, Hewlett-Packard and Casio) have put their heads together to introduce a new generation of wireless handheld organizers** that will do more than the average appointment book. Palm Computing owns more than 70 percent market share of handheld PDAs.

The "Pocket PC" will play music, record sound, balance checkbooks, buy stuff over the Web, send e-mail and surf the Internet. They connect to the Web through a cell phone. The full-featured Pocket PC contains a slimmed-down but useable version of the Internet Explorer browser, a digital voice recorder and a Windows Media Player for music and video files. It also comes with bundled "pocket" (smaller) versions of Microsost's Word, Excel and Outlook.

Retail will range from $500 to $600 - about a hundred dollars more than the Palm organizer. Microsoft said a user can listen to MP3 music files, play a video game and look up a phone number – all at the same time.

■ **Laptop computers devour expensive batteries, so engineers are trying to figure out new ways to squeeze every last microamp out of them.** One clever method involves switching off various parts of the computer when they aren't in use. Most storage drives aren't read from or written to more than one at a time; and why provide power to the audio amplifier when there's nothing to hear? Why power a modem when there's nothing connected to it? High switching speeds can still run systems but take out brief periods of non-use, thereby making the batteries last much longer.

■ **Various semiconductor manufacturers have been studying the gradual decline of main power-bus voltage levels** and how far they expect them to go. For many years, computers ran from +5.00 volts. To speed up circuitry, this voltage was lowered to +3.3 volts. Engineers say that we could expect this to go as low as +0.5 volts within 10 years, or even +0.3 volts. We still can't get away from Ohm's Law, though; to get the same amount of power by lowering the voltage, the current draw must increase.

■ **More companies are installing computer network security software that alerts supervisors when employees access non-approved Web sites on company time.** Programs such as Web Traffic Control monitor incoming data and alert the user when certain items such as pornography, gambling, job search or stock market information is downloaded, reminding the user that surfing the Net for non-company topics is against policy. If too many warnings for a particular user are recorded, said person can be "locked out" of certain Internet Web sites.

■ **One of the most failure-prone areas of all computers is the keyboard.** Anything mechanical will eventually wear out. Think of the thousands of keystrokes that go into each issue of *The W5YI Report*, for example. Springs eventually lose their flexibility, and keyswitch contacts slowly build up corrosion. It's often more economical to replace the entire keyboard than individual switches. In some applications, though, it can be a real headache or even impossible to replace a keyboard. That's why special, long-life keyboards use Hall-effect switches, which activate when approached by a magnetic field. This eliminates switch contacts because nothing but a magnet on the end of a shaft moves on any key.

■ **Semiconductor companies continue to make more powerful microprocessors.** Intel's Itanium is a 64-bit monster that can perform six billion floating-point operations (flops) per second, while performing up to six instructions for each tick of its clock. Advanced Micro Devices is working on their own 64-bit chip, too.

■ **Testing microcontrollers these days may not be complete.** It's very difficult for today's computers to simulate each and every possible situation it could find itself in. That's why much of the software code embedded in an application-

specific computer system never gets tested. One industry study says as much as five percent of the software is never tested because it's buried so deeply inside the system. It may never be needed in the real world, but you never know what users will turn up.

■ **How do programmers prevent their work from being copied?** It takes a lot of work and many, many hours to create something new that works. Seeing all that time and labor stolen from you because someone out there reverse-engineered it can make you grind your teeth. One method that some hardware and software engineers are using may seem, on the face of it, illogical. They purposely write "spaghetti logic" code -- software that doesn't flow smoothly from start to finish, but jumps around in strange fashion. The program still works very well, but the technique defies what programmers are taught in school. It makes the program difficult and time consuming to "hack." Dedicated pirates can still do it, but it takes more effort.

■ **Another method of software protection involves a new type of Electrically Erasable Programmable Read-Only Memory (EEPROM).** These chips are often the home of the actual software inside dedicated computer systems, and are often easy to copy. But some of the latest EEPROMs include passwords. The system must provide the proper password, or the chip will prevent access to certain sections of its memory. (Another feature counts how many times someone tries to "hack" into the EEPROM, keeping track of wrong password guesses. If you don't get it right within a certain number of tries, the EEPROM automatically erases itself!)

■ **"Hot-swappable" devices can, supposedly, be plugged in and removed from a computer system with the power on.** The latest hardware and software platforms can, in theory, reconfigure themselves on the fly when boards and peripherals are inserted or unplugged. But it's not quite that easy; tiny imperfections on the contacts of the card edges can (and often do) create irregularities (glitches) in address lines, data lines and control signals, which of course can screw up an entire system and cause a reset. How can this be fixed? Some manufacturers are now including a small amount of resistance into the tips of these card connectors, which absorb some of the "shock" and cushion the effect of "hot-swapping."

■ **If you're upgrading to Windows 2000, prepare to upgrade your hardware again, too.** Chances are your present PC isn't a Pentium Pro 200 with 128 MB of RAM. Users report any equipment less powerful than this just won't cut it.

■ **"Press <ENTER> for M31 Galaxy."** Really, it's that simple. Manufacturers of amateur telescopes offer computer-controlled guidance systems for their products. During high magnification, the rotation of the earth causes an object in the telescope's field of view to slowly move. Once aligned properly, the motors on the telescope mount automatically compensate for this motion and keep the target in sight. More advanced guidance systems include a keyboard and display, with thousands of astronomical objects recorded inside an internal database. Once you align the telescope (feed in latitude, longitude, time of day), punching in the name of what you want to see will automatically point the telescope to it. It will even tell you if the object isn't in the sky at that moment.

INTERNET NEWS

■ **American Online, the nation's largest Internet Service Provider, has taken the wraps off of three small "Net Appliances"** that will let subscribers log onto AOL from anywhere or anytime.

Designed and built in collaboration with Gateway, Inc. they consist of a kitchen counter-top appliance; a wireless AOL Web pad that can fit inside a briefcase; and a desktop appliance that serves as a lower-cost alternative to the personal computer. The Web Pad has an LCD touch sensitive screen which is written to with a stylus.

The devices have wireless or traditional keyboards, use the Linux operating system and contain the new updated Version 6.0 of its Netscape Web browser. AOL acquired Netscape Communications a year ago.

The new line was shown for the first time at the Spring Internet World 2000 trade show in Los Angeles held in early April. The "appliances" should be ready for Christmas selling. We also heard that American Online was working on AOL-TV ...and a stereo system in partnership with WinAmp ...a popular online music software program.

■ **In a possibly far-reaching decision,** a Munich (Germany) court has ruled that AOL Germany is responsible for copyright violation when its subscribers exchange music files between themselves. Hit Box Software (a German Company) sued AOL for copyright infringement in 1998 when it discovered its digital music was being traded over the service. AOL Germany said it would appeal arguing that it lacks the technical means to monitor data being transferred among its users.

■ **As you read this, half of America's population has access to the Internet.** Estimates say half a billion people worldwide will be using the 'Net within two years.

■ **You soon may be able to disable Web-based advertising.** At least one software company is beta-testing a program that turns off ads while downloading a Web page. This streamlines the process, letting you see only what you really want to seethe page itself. This may cause consternation for some Internet companies, which rely on Web-based advertising to pay for the cost of offering service.

WASHINGTON WHISPERS

■ **NASA says the loss of the $200 million Mars Polar Lander was probably due to a software bug.** After an extensive investigation, engineers concluded that the most likely cause of the loss of contact with the probe last December 3rd came from the on-board computer misinterpreting a signal that it should have ignored. During its powered descent to the Martian surface, a spurious signal from its landing gear may have told the control computer that it had actually landed, when in fact it was still more than 100 feet up and still falling at 50 mph. Following instructions in its program, the Mars Polar Lander then shut off its retro-rockets prematurely and crashed.

Project managers agree that the software should have been tested more thoroughly before launch, and admit that it could have been corrected in flight. Two smaller probes riding aboard the M.P.L. were also lost,, though they weren't really ready for the mission, either, said NASA.

This is the second Mars mission failure in a row due to simple mistakes, and more mishaps continue. The $75 million High Energy Solar Spectrographic Imager

satellite, which will study solar flares from Earth orbit, was almost shaken to pieces during ground tests recently when it was mistakenly subjected to 20-g forces instead of its rated 2-g. Half of its panels will need to be replaced.

NASA blames the failures on trying to do too much too quickly, with not enough money and not enough staff. They are slowing down their schedule to make sure these expensive projects are managed correctly.

■ **What will become of today's TV band?** Remember, the FCC wants all TV stations to upgrade to HDTV and move their spectrum within a few years. Why not use the current VHF band (which will be abandoned) to help move Internet data? Some companies are pushing for it. They're asking the FCC to allow them to at least share part of the TV broadcast band to transmit and receive high-speed Internet data. 'Net-based companies say that even with telephone and fiber-optic lines, data growth is fast and fierce and they need some way to avoid digital traffic jams in the future.

■ **Computer access and telecommunications for America's oldest people** - Three times as many American Indians - about one-third - live in poverty as compared with all U.S. citizens. And only half of Indian households have a telephone compared with 94 percent of all U.S. households.

To help reduce the "digital divide" between the "haves" and the "have nots" the Clinton administration plans to provide telephone service for 300,000 American Indian households on reservations at a cost of $1 a month.

Several high tech companies have made multi-million dollar commitments to assist with funding, training, software and hardware. Among them are Qualcomm, Novell, Microsoft, Hewlett-Packard, and Gateway Computers. America Online will offer 100,000 free Internet accounts. And the FCC will kick in an additional $17 million from an existing program that underwrites phone service for low-income people.

■ **A nationwide program to connect schools, libraries and under-served communities to the Internet will receive $2.25 billion in funding this year.** The FCC has announced that funding commitments for the third year of the *Schools and Libraries Universal Service Program* - known as the E-Rate - will receive full funding.

Not all legislators approve of the 1996 Telecom law that allows the government to tax phone bills in order to subsidize Internet discounts for schools and libraries. Some still call the measure "the Gore tax."

- 63% of U.S. public school classrooms had Internet access in 1999, a 12% rise in Internet connectivity since 1998.
- In the first two years, the E-Rate helped connect over one million public school classrooms to the Internet.
- Just six years ago, only a third of the nation's public schools had computers with access to the Internet.
- Last year, 82% of the Nation's public schools and over half of the public libraries received discounted services under the program, with more than 53,000 urban schools and more than 25,000 rural schools receiving E-Rate support.
- This year's applications for discounts show high demand for the program: it received over 36,000 applications totaling $4.7 billion in discount requests.

The program has also helped connect almost 10,000 community libraries.

AMATEUR RADIO

■ **Macau DXCC status undetermined** – After 442 years under Portuguese rule, the small enclave of Macau has been handed back to China. With a population of 430,000 it was Europe's final remaining outpost in Asia. The DX fraternity anxiously waits to see if Macau XX9 will continue as a DXCC country. The ARRL DX Advisory Committee is yet to determine the status of Macau. A decision depends on whether China receives a callsign block from the ITU for use in Macau.

■ **Solo yacht bid by ham** – Californian radio amateur, David Clark KB6TAM, aged 74, is now in the pacific headed for Tahiti during his attempt to be the oldest person to sail around the world solo. David left Florida in early December skippering a 44-foot steel hulled sloop, and has been heard regularly on the 14.313MHz Maritime Net, and often phone patched to his family. *[Above from Jim Linton VK3PC, WIA Victoria, Australia]*

■ **Ham radio is no longer the only link to Antarctica.** Though scientists used it to talk with loved ones back home for decades, and also used sporadic satellite contacts, they have upgraded their telecommunications network at the South Pole to access high-speed Internet traffic. Geostationary satellites can't see the north or south poles, so "birds" with highly inclined orbits (sound familiar?) are now used to exchange voice and data -- for only hours at a time, of course, but it's still better than a few meager minutes at a time (which was all that polar-orbiting satellites could provide.) Scientists at the pole enjoy more privacy with Internet-based voice communications than they had with ham radio, too.

■ Lee Wical, KH6BZF filed one of the better reports we have received on an April 15th W5YI-VEC upgrade session.

"In Honolulu today, lead by contact VE, Richard LaChance, WH6T, a "Midnight Madness" exam session was conducted just one minute past midnight Friday night through Saturday morning.

The FCC examinations and certifications doors were flung open early this Saturday morning and people flocked to the new FCC restructured testing.

Yup, Honolulu people were standing in line prior to midnight to obtain their upgrades and examinations under the new FCC restructuring schedule.

There were soft drinks, muffins, sweet rolls, chips and dips, nuts, candy and of course the door prize of a Kenwood, Model TM-261-A, 2-meter; 50-watt, mobile FM Transceiver.

That door prize went to 92-yr old (our oldest applicant), Jim Welsh, KH6HEP. Jim doesn't have an auto any more, but he can sure blast Oahu repeaters from his Waikiki condo.

There was a tremendous turnout. A dozen VEs were assisted and encouraged by people like personnel from Starcomm Wireless, Kenwood, ARRL affiliated clubs, i.e., the Honolulu DX Club, the Honolulu ARC and the Honolulu QCWA gang. The VEC will bend from the volume of paperwork.

And from a near hundred applicants with smiles on their faces, I would register a rip roaring success due to John Peters, K1ER, Richard LaChance, WH6T and others who brought to Honolulu and Oahu the focus on Amateur Radio this day.

■ **As we write this, both new ARRL President Jim Haynie, W5JBP, and Executive Vice President David Sumner, K1ZZ, are in Paris, France** representing the ARRL at the 75th anniversary

of the founding of the International Amateur Radio Union, April 18, 1925 in Paris. A meeting of the IARU Administrative Council will be held in conjunction with this event. The IARU is a worldwide federation of national Amateur Radio societies with members in 150 countries and separate territories. Past ARRL President Larry Price, W4RA, now serves as the IARU's president. The IARU is administered from ARRL Headquarters which serves as its international secretariat.

■ **The ARRL is opposing a Petition for Rule Making (RM-9807) that seeks to eliminate the Citizens Band rule prohibiting communication over distances greater than 250 km.** The Petition was filed by Popular Communications Contributing Editor Alan Dixon, N3HOE. The League said that long-distance communication is contrary to the fundamental purpose of the CB Radio Service, and that legalizing it would encourage the use of illegal power amplifiers. The FCC is expected to deny the petition.

■ **The ARRL Field & Educational Services Dept. is assisting clubs with free recruitment handouts** to support theater exhibits in conjunction with the feature-length movie **"Frequency"** which is just now being introduced around the country.

Many prizes are being offered by the Amateur Radio industry (including an ICOM IC-746 HF plus VHF transceiver) to ham clubs that do the best job of promoting Amateur Radio at a local theater screening the movie.

The science fiction flick uses ham radio to allow a long-deceased father and his son to meet and communicate on the air waves.

The ARRL will also ship out up to 400 brochures at no cost, (Telephone HQ at 860-594-0200.) There are handouts for kids, adults, Boy Scouts and Girl Scouts ...also a 11 x 17" poster plus comics available. The League will donate the choice of a 2000 *ARRL Handbook for Radio Amateurs* or 2000 *Handbook* CD-ROM to each exhibiting club.

■ **Overnight radio talk show host Art Bell, 54, W6OBB, is retiring again.** Bell announced his retirement from "Coast to Coast AM with Art Bell" on March 31and is heading back to 75 meters. He will air his final show on April 26th. The show, carried on more than 400 stations across the nation, reaches an estimated 16 million listeners. The show's syndicator, Premiere Radio Networks said that he will be replaced by Mike Siegel, a veteran talk radio broadcaster based in Seattle. Bell, 54, said he was leaving because of the ongoing agony his family has suffered since his son was kidnaped and raped in 1997 by a substitute teacher. He also said he was leaving because of being falsely accused of being a child molester. *(Reported by the Associated Press on April 11th.)*

■ **Amateur Radio Enforcement News** -- The FCC has sent a warning letters to five different radioamateurs due to evidence that they were deliberately and malicious interfering with the radio operations of other amateurs.

Byron R. Eggers, KR4GR of Delray Beach, FL was cited for his questionable operation on the 75-Meter Amateur Band. "This interference has occurred at various times and includes broadcasting, transmitting music, failure to identify and obscenity."

John O. Murray, KG4BNB of Fairhope, AL was warned about his interference to other Amateurs on the 146.820 MHz repeater in his area. "This interference has occurred at various times and includes broadcasting, failure to identify and obscenity."

William J. Richards, KB8WPX of Lake City, MI was also notified about his interference to the Cadillac, Michigan repeater, 146.98/38 MHz. "This interference included sound effects and unidentified transmissions."

Charles F. Burian KB9QVS of Lyons, IL was warned about interference to the Argonne Amateur Radio Club repeater (145.190 MHz) in the Chicago area. "The interference includes broadcasting, making threats, unidentified transmissions and use of your station by an unauthorized operator. ...Additionally, you are expected to comply with any requests from the repeater control operator to cease operation on the repeater."

Timothy M. Smith, WA1HLR of Skowhegan, ME was cautioned about interference to Amateurs operating on the 75 and 40 Meter Amateur bands. "Such interference apparently occurs at various times and includes broadcasting, making unidentified transmissions and sound effects."

All were warned that additional incidents will result in a fine and in revocation proceedings. They were directed to call the FCC within ten days to discuss this matter.

■ The FCC is requiring **Gerald J. Friedel,WB9CIK, of Apple Valley, CA** to retake his General Class license examination elements under the supervision of the FCC office at Cerritos, CA prior to June 30, 2000. Failure to appear will result in license cancellation.

■ **Frank Mauney of Cherryville, NC** has been sent a warning letter advising him that the FCC has evidence that he has been transmitting without a license on the two-meter Amateur band, including 145.350 MHz, in the Charlotte, NC area. Mauney was told that unlicensed operation is a violation of the Communication Act which subjects him to a fine or imprisonment as well as seizure of his radio transmitting equipment. He must contact the FCC within ten days about this matter.

■ **The Millenium Cab Company of Cordova, Alaska** has been issued a second warning notifying them that the FCC has received information that the firm continues to operate a taxicab company on Amateur Radio Service frequencies 145.500 and 445.500 MHz. They were first warned on February 5, 2000. They were advised that such unlicensed operation can result in criminal penalties and that fines range from $7,500 to $10,000. Furthermore, continued unlicensed operation will jeopardize any commercial application you may file for your taxi company. The firm is to contact the FCC within ten days.

■ **Eugene M. Rossi KC6JTC of Vacaville, CA** has been notified that the FCC has reports from the control operator of the K7IJ repeater system that "...the repeater was shut down due to your interference and harassment of other operators..." He was asked to refrain from that conduct and adhere to proper Amateur practice, but refused. Rossi was warned by the FCC that additional instances will result in his license renewal being designated for a hearing to determine if it would be in the public interest to grant it. He was directed to call the FCC within ten days.

■ **Sherman Alexander, W6AFA of Studio City, CA** was sent a advisory notice reminding him of the frequency limitations that apply to Technician Plus Amateur licensees. "Privileges do not include operation above 28.500 MHz in the ten meter Amateur Band. Failure to adhere to those frequency limitations will jeopardize your Amateur radio license."

COMMISSION PROPOSES TO REVISE GMDSS RULES

The FCC released a *Notice of Proposed Rulemaking* on March 24th seeking to consolidate, revise, and streamline the Rules governing Global Maritime Distress and Safety System (GMDSS) maritime communications. GMDSS is a global plan for emergency alerting and search and rescue on the high seas.

In 1988, the IMO (International Maritime Organization -the British-based United Nations organization that oversees ocean-going vessels) amended the *Safety of Life at Sea* (SOLAS) rules to provide for the implementation of the GMDSS on a worldwide basis. The amendments provided for a phased-in schedule between February 1, 1992, and February 1, 1999.

Prior to the GMDSS, each ship equipped with a Morse Code station was required to maintain a continuous, live watch over the ship's communications equipment to ensure that someone was available to receive and transcribe distress communications. In 1996, Congress enacted legislation which provides that a U.S. ship operating in accordance with the GMDSS provision is no longer required to install a radio telegraphy Morse Code station.

The GMDSS is primarily a ship-to-shore system (though it has ship-to-ship capabilities) for the transmission of distress communications. Instead of manual Morse code radiotelegraphy, the system utilizes automated (or semi-automated) communications via satellite, and advanced terrestrial systems using digital selective calling (DSC). DSC is a digital signaling system that allows ship and shore stations to call each other directly, rather than requiring a radio operator to continuously monitor a common calling channel.

GMDSS ships must carry two qualified radio operators who must hold the GMDSS Radio Operators' License. In addition, there is a GMDSS Maintainer's License which permits the holder to perform at-sea maintenance on communications equipment.

Under the GMDSS, ships are required to carry varying amounts of communications equipment to provide a distress signal to the shore facilities depending upon which of the four "Sea Areas" the vessel operates. Each country identifies its four Sea Areas (A1 through A4) and then notifies the IMO. Sea Area A1 is an area within the radiotelephone coverage of at least one very high frequency (VHF) coast station in which continuous DSC is available.

Sea Area A2 is an area, excluding Sea Area A1, within the radiotelephone coverage of at least one medium frequency (MF) coast station at which continuous DSC is available. Sea Area A3 is an area, excluding Sea Areas A1 and A2, within coverage of an International Maritime Satellite Organization's (INMARSAT) maritime mobile geostationary satellite in which continuous alerting is available. Sea Area A4 is the area outside of Sea Areas A1, A2 and A3 ...essentially the Polar Regions.

The ITU Regulations, however, provide for a Restricted Operator's Certificate for compulsory ships that operate exclusively within Sea Area A1. A Restricted Operator's Certificate requires familiarity with all of the GMDSS equipment required for vessels sailing within Sea Area A1, including VHF DSC procedures, and basic radio law and operating practice with which every maritime radio operator should be familiar.

On January 14, 1998, the U.S. GMDSS Task Force petitioned the FCC to create a third GMDSS license ...the Restricted GMDSS Radio Operator's License. The GMDSS Task Force is a group of government authorities, commercial vessel owners and operators, training institutions, service agents, manufacturers, and labor organizations chartered by the U.S. Coast Guard to supplement government functions in expediting the implementation of the GMDSS.

The GMDSS Task Force believes that the examination for a FCC GMDSS Radio Operator's License and the U.S. Coast Guard's theoretical examination are based on the same material and similar questions. Consequently the FCC is proposing to authorize the U.S. Coast Guard to issue a *Proof of Passing Certificate* (PPC) to operators and maintainers of radio equipment. Upon receipt of the PPC, the Commission would issue a GMDSS Radio Operator's License (or, if it is created, a Restricted GMDSS Radio Operator's License.)

In line with the GMDSS Task Force request, the FCC is now proposing to create a new Restricted GMDSS Radio Operator License to provide a subordinate class of GMDSS license for radio operators aboard ships that operate exclusively within Sea Area A1 (an area extending approximately 20 miles from the coast.)

The NPRM proposes to:

(1) amend the FCC rules to incorporate the current international standards and recommendations for GMDSS;

(2) amend the rules as requested by Globe Wireless, to allow digital transmissions on high seas frequencies currently allocated for Morse Code radiotelegraphy;

(3) consider the extent to which the GMDSS rules should apply to the commercial fishing industry;

(4) create a new Restricted GMDSS Radio Operator class of commercial operator license, and

(5) accept a *Proof of Passing Certificate* from the USCG training program as evidence that an applicant has met his or her obligations for any of the GMDSS operator licenses.

Comment period closes 90 days after Federal Register publication and reply comments120 days after Federal Register publication.

W5YI REPORT

America's Oldest Ham Radio Newsletter

May 1, 2000

FCC TAKES ACTION AGAINST TELEPHONE "SLAMMERS"

"Today, we re-affirm our commitment to eliminating slamming through a zero tolerance program. The absolution rules and re-payment remedies contained in this order completely take the profit out of slamming." *FCC Chairman William Kennard*

On April 13th, the FCC adopted tougher rules to combat the illegal practice of slamming. Slamming, the single largest source of complaints to the Commission over the last several years, is the unauthorized switching of a consumer's preferred long-distance telephone company.

Under new rules, state regulators will have the power to pursue unethical long-distance phone providers that illegally switch people's service without their permission. Slamming became the top consumer problem for state and federal telephone regulators once intense competition was unleashed by the *Telecommunications Act of 1996.*

FCC Chairman William Kennard said that "When I talk to consumers around the country, the one issue that raises the most volatile and emotional response is slamming. Consumers feel a real sense of violation when they are slammed. So we are putting a stop to it. Since 1995, the FCC has received over 80,000 slamming complaints."

In 1996 there were 12,795 written complaints processed by the FCC. In 1997, 20,475 complaints, 1998: 20,124, 1999: 21,868 ...and so far this year there have been over 3,000 complaints.

Since April 1994, the Commission has:

1. Imposed "slamming" fines against eight companies totaling $10,321,500.
2. Entered into consent decrees with 12 carriers with combined payments of $2,710,000, and;
3. Proposed $7,640,000 in fines against five companies.

The Commission now believes that state regulatory commissions are better equipped than the industry to resolve slamming questions and directed that those disputes be brought before state commissions, or the FCC in cases where a state declines to administer the new rules. The rules also require slamming carriers to pay out 150% of all payments received from consumers.

Previously, the Commission had delayed the effective date of the liability rules to permit the industry to reach consensus on a plan to have an independent third party administrator resolve slamming disputes and administer the liability rules. However, such a consensus was never reached.

NARUC, the National Association of Regulatory Utility Commissions which represents state regulators, said 35 state regulatory commissions have volunteered to enforce anti-slamming rules and the Commission accepted their proposal. And more states are expected to join them.

Kennard said. "While states will be the primary adjudicators of individual slamming complaints, slamming complaints will remain a top priority of this Commission's Enforcement Bureau." He added that "...the FCC's Enforcement Bureau had fined slammers to the tune of some $4.3 million dollars in just the past few months and entered into consent decrees to prevent future wrongdoing."

Additionally, where the consumer has not paid the slammer, the consumer is excused from having to pay for service for up to thirty days after being slammed. However, for those cases where the consumer has paid the slamming carrier, the Commission modified the applicable liability rules. Under the new rules, a slammer is obligated to pay to the authorized carrier 150% of the charges it received from the consumer.

The authorized carrier will, in turn, reimburse the consumer 50% of the charges the consumer paid to the slammer. Thus, the Commission increased penalties for slamming and increased the incentives for authorized carriers to go after slammers, while ensuring that consumers receive compensation.

The order is a reconsideration and an extension of the anti-slamming rules that the Commission adopted in 1998. Those rules included:

1. Strengthening the liability rules to take the profit out of slamming by absolving consumers of 30 days of slamming charges.
2. Strengthening the procedures by which carriers must obtain customer verification of preferred carrier change requests.
3. Broadening the scope of these verification procedures to apply to local as well as long distance carriers.
4. Establishing rules governing "preferred carrier freezes," which prohibit carriers from changing a consumer's preferred carrier without that consumer's express authorization to "lift the freeze."

In May 1999, the U.S. Court of Appeals for the D.C. Circuit stayed the liability rules at the request of MCI WorldCom.

The Commission believes that their April 13th actions, particularly the decision to have the states resolve slamming disputes and the modification of the re-rating rules, should remove any concern that may have prompted the court to impose a stay, and will ensure that consumers are fully protected from slamming.

"Consumers need to know which carriers are the worst violators," Kennard said.. "Therefore, I have asked our Consumer Information Bureau to compile a list of slammers and to make that list publicly available so that consumers will know the track record of all long distance carriers and be able to make their choices accordingly."

Action by the Commission April 13, 2000 - CC Docket No. 94-129